

**Amendment and Response to Restriction Requirement**

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Applicant(s): Emery et al.

Serial No.: 10/749,602

Filed: December 31, 2003

For: IN OVO DELIVERY OF AN IMMUNOGEN CONTAINING IMPLANT**Amendments to the Claims**

This listing of claims replaces all prior versions, and listings, of claims in the above-identified application:

1-33. (Canceled)

34. (Original) A method for inducing immunity in a bird against selected immunogen comprising:

injecting a biocompatible implant *in ovo*, wherein the biocompatible implant comprises the selected immunogen and a biocompatible matrix material, wherein the implant provides for sustained release of the immunogen until a time when maternal antibodies of the bird to the immunogen are sufficiently reduced so that the bird is capable of mounting an immune response to the immunogen, wherein the immunogen comprises a siderophore receptor protein from a gram-negative bacterium.

35. (Original) The method according to claim 34, wherein the implant is injected during the fourth quarter of incubation of an egg.

36. (Original) The method according to claim 34, wherein the implant is injected at about 15-28 days of incubation of an egg.

37. (Original) The method according to claim 34, wherein the bird is selected from the group consisting of turkey, chicken, duck, goose, ostrich and pheasant.

38. (Original) The method according to claim 34, wherein the bird is a turkey and the implant is injected at about 25-27 days of incubation of an egg.

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39. **(Original)** The method according to claim 34, wherein the implant provides for sustained release of the immunogen for about 1-90 days post-hatching.
40. **(Original)** The method according to claim 34, wherein the implant provides for sustained release of the immunogen for about 1-60 days post-hatching.
41. **(Original)** The method according to claim 34, wherein the implant provides for sustained release of the immunogen for about 1-35 days post-hatching.
42. **(Original)** The method according to claim 34, wherein the implant is injected at about 25-27 days of incubation of an egg and wherein the implant provides for sustained release of the immunogen for about 1-90 days post-hatching of the egg.
43. **(Original)** The method according to claim 34, further comprising administering a second dose of the immunogen at 3-12 weeks post hatching to stimulate a secondary immune response.
44. **(Original)** The method according to claim 34, wherein the bird is a chicken and the implant is injected at about day 17 to 19 of incubation of an egg.
45. **(Withdrawn)** A method for inducing immunity in a bird against selected immunogen comprising:  
injecting a biocompatible implant *in ovo*, wherein the biocompatible implant comprises the selected immunogen and a biocompatible matrix material, wherein the implant provides for sustained release of the immunogen until a time when maternal antibodies of the bird to the immunogen are sufficiently reduced so that the bird is capable of mounting an immune response to the immunogen, wherein the implant further comprises an adjuvant.

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46. **(Withdrawn)** The method according to claim 45, wherein the implant is injected during the fourth quarter of incubation of an egg.

47. **(Withdrawn)** The method according to claim 45, wherein the implant is injected at about 15-28 days of incubation of an egg.

48. **(Withdrawn)** The method according to claim 45, wherein the bird is selected from the group consisting of turkey, chicken, duck, goose, ostrich and pheasant.

49. **(Withdrawn)** The method according to claim 45, wherein the bird is a turkey and the implant is injected at about 25-27 days of incubation of an egg.

50. **(Withdrawn)** The method according to claim 45, wherein the implant provides for sustained release of the immunogen for about 1-90 days post-hatching.

51. **(Withdrawn)** The method according to claim 45, wherein the implant provides for sustained release of the immunogen for about 1-60 days post-hatching.

52. **(Withdrawn)** The method according to claim 45, wherein the implant provides for sustained release of the immunogen for about 1-35 days post-hatching.

53. **(Withdrawn)** The method according to claim 45, wherein the implant is injected at about 25-27 days of incubation of an egg and wherein the implant provides for sustained release of the immunogen for about 1-90 days post-hatching of the egg.

54. **(Withdrawn)** The method according to claim 45, further comprising administering a second dose of the immunogen at 3-12 weeks post hatching to stimulate a secondary immune response.

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55. **(Withdrawn)** The method according to claim 45, wherein the bird is a chicken and the implant is injected at about day 17 to 19 of incubation of an egg.

56. **(Withdrawn)** A method for inducing immunity in a bird against a selected immunogen comprising:

injecting a biocompatible implant *in ovo*, wherein the biocompatible implant comprises the selected immunogen and a biocompatible matrix material, wherein the implant provides for sustained and delayed release of the immunogen until a time when maternal antibodies of the bird to the immunogen are sufficiently reduced so that the bird is capable of mounting an immune response to the immunogen, wherein the immunogen comprises a siderophore receptor protein from a gram-negative bacterium.

57. **(Withdrawn)** The method according to claim 56, wherein the implant is injected during the fourth quarter of incubation of an egg.

58. **(Withdrawn)** The method according to claim 56, wherein the implant is injected at about 15-28 days of incubation of an egg.

59. **(Withdrawn)** The method according to claim 56, wherein the bird is selected from the group consisting of turkey, chicken, duck, goose, ostrich and pheasant.

60. **(Withdrawn)** The method according to claim 56, wherein the bird is a turkey and the implant is injected at about 25-27 days of incubation of an egg.

61. **(Withdrawn)** The method according to claim 56, wherein the implant provides for sustained release of the immunogen for about 1-90 days post-hatching.

62. **(Withdrawn)** The method according to claim 56, wherein the implant provides for sustained release of the immunogen for about 1-60 days post-hatching.

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63. **(Withdrawn)** The method according to claim 56, wherein the implant provides for sustained release of the immunogen for about 1-35 days post-hatching.
64. **(Withdrawn)** The method according to claim 56, wherein the implant is injected at about 25-27 days of incubation of an egg and wherein the implant provides for sustained release of the immunogen for about 1-90 days post-hatching of the egg.
65. **(Withdrawn)** The method according to claim 56, wherein the bird is a chicken and the implant is injected at about day 17 to 19 of incubation of an egg.
66. **(Withdrawn)** The method according to claim 56, further comprising administering a second dose of the immunogen at 3-12 weeks post hatching to stimulate a secondary immune response.
67. **(New)** The method of claim 34, wherein the implant further provides for delayed release.
68. **(New)** The method of claim 34, wherein the immunogen further comprises a porin protein.
69. **(New)** A method for inducing immunity in a bird against selected immunogen comprising:  
injecting a biocompatible implant *in ovo*, wherein the biocompatible implant comprises the selected immunogen and a biocompatible matrix material, wherein the implant provides for sustained release of the immunogen until a time when maternal antibodies of the bird to the immunogen are sufficiently reduced so that the bird is capable of mounting an immune response to the immunogen, wherein the immunogen comprises a siderophore receptor protein from a bacterium.

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70. (New) A method for inducing immunity in a bird against selected immunogen comprising:
- injecting a biocompatible implant *in ovo*, wherein the biocompatible implant comprises the selected immunogen and a biocompatible matrix material, wherein the implant provides for sustained release of the immunogen until a time when maternal antibodies of the bird to the immunogen are sufficiently reduced so that the bird is capable of mounting an immune response to the immunogen, wherein the immunogen comprises a siderophore receptor protein from a gram-positive bacterium.
71. (New) The method of claim 70, wherein the implant further provides for delayed release.
72. (New) The method of claim 70, wherein the immunogen further comprises a porin protein.
73. (New) The method according to claim 70, wherein the implant is injected during the fourth quarter of incubation of an egg.
74. (New) The method according to claim 70, wherein the implant is injected at about 15-28 days of incubation of an egg.
75. (New) The method according to claim 70, wherein the bird is selected from the group consisting of turkey, chicken, duck, goose, ostrich and pheasant.
76. (New) The method according to claim 70, wherein the bird is a turkey and the implant is injected at about 25-27 days of incubation of an egg.
77. (New) The method according to claim 70, wherein the implant provides for sustained release of the immunogen for about 1-90 days post-hatching.

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78. (New) The method according to claim 70, wherein the implant provides for sustained release of the immunogen for about 1-60 days post-hatching.

79. (New) The method according to claim 70, wherein the implant provides for sustained release of the immunogen for about 1-35 days post-hatching.

80. (New) The method according to claim 70, wherein the implant is injected at about 25-27 days of incubation of an egg and wherein the implant provides for sustained release of the immunogen for about 1-90 days post-hatching of the egg.

81. (New) The method according to claim 70, further comprising administering a second dose of the immunogen at 3-12 weeks post hatching to stimulate a secondary immune response.

82. (New) The method according to claim 70, wherein the bird is a chicken and the implant is injected at about day 17 to 19 of incubation of an egg.